

PATENT -- AMENDMENT WITH
APPEAL UNDER MPEP §1207

In the claims:

Please amend the claims to read in full as follows:

1. (Unchanged) A method for optimizing a computer program comprising a child procedure and a parent procedure, wherein the parent procedure comprises at least one statement that invokes the child procedure, wherein the method comprises:

 saving site register-pressure data from the execution of a first compilation; and
 making at least one inlining decision using the site register-pressure data during a second compilation.

2. (Unchanged) The method of claim 1, further comprising:
 saving a maximum register-pressure occurring in each procedure in the computer program; and
 making the at least one inlining decision using the maximum register-pressure data.

3. (Unchanged) The method of claim 2, wherein the site register-pressure data comprises:
 a register pressure at each call site in the computer program that is a potential inlining candidate.

PATENT -- AMENDMENT WITH
APPEAL UNDER MPEP §1207

4. (Unchanged) The method of claim 1, wherein the making step further comprises:
inlining the child procedure of the computer program into the parent procedure, in place
of the statement that invokes the child procedure.

5. (Amended) A method for optimizing a computer program comprising a child
procedure and a parent procedure, wherein the parent procedure comprises at least one statement
that invokes the child procedure, wherein the method comprises:

saving site register-pressure data from the execution of a first compilation, wherein the
site register pressure data comprises a register pressure at each call site in the computer program
that is a potential inlining candidate; and

making at least one inlining decision using the site register-pressure data during a second
compilation, wherein when deciding whether to inline the child procedure into the parent
procedure, determining whether a sum of the maximum register-pressure and the site register-
pressure exceeds a number of available registers.

6. (Unchanged) The method of claim 5, further comprising:
when the determining step is true, refraining from inlining the child procedure into the
parent procedure.

PATENT -- AMENDMENT WITH
APPEAL UNDER MPEP §1207

7. (Unchanged) The method of claim 5, further comprising:

when the determining step is false, inlining the child procedure into the parent procedure in place of the statement that invokes the child procedure.

8. (Unchanged) The method of claim 7, further comprising:

setting the maximum register-pressure of the parent procedure to be a maximum of its existing value or the sum of the maximum register-pressure of the child procedure and the site register-pressure.

9. (Unchanged) A computer system for compiling a computer program including a child procedure and a parent procedure which includes one or more statements that invoke the child procedure, into a machine-readable representation, the computer system comprising:

an optimizer that optimizes the computer program into an optimized representation, the optimizer saving site register-pressure data from the execution of a first compilation, and making at least one inlining decision using the site register-pressure data during a second compilation; and

a machine-readable code generator that generates a machine-readable representation of the computer procedure from the optimized representation.

PATENT -- AMENDMENT WITH
APPEAL UNDER MPEP §1207

10. (Unchanged) The computer system of claim 9, wherein the optimizer further:
saves a maximum register-pressure occurring in each procedure in the computer program;
and
makes the at least one inlining decision using the maximum register pressure data.

11. (Unchanged) The computer system of claim 10, wherein the site register-pressure
data comprises:
a register pressure at each call site in the computer program that is a potential inlining
candidate.

12. (Unchanged) The computer system of claim 9, wherein the optimizer further
comprises:
inlining the child procedure of the computer program into the parent procedure, in place
of the statement that invokes the child procedure.

13. (Amended) A computer system for compiling a computer program including a child
procedure and a parent procedure which includes one or more statements that invoke the child
procedure, into a machine-readable representation, the computer system comprising:
an optimizer that optimizes the computer program into an optimized
representation, the optimizer saving site register-pressure data from the execution of a

PATENT -- AMENDMENT WITH
APPEAL UNDER MPEP §1207

first compilation, and making at least one inlining decision using the site register-pressure data during a second compilation;

wherein the site register-pressure data comprises a register pressure at each call site in the computer program that is a potential inlining candidate; and

wherein, when deciding whether to inline the child procedure into the parent procedure, the optimizer further determines whether a sum of the maximum register-pressure and the site register-pressure exceeds a number of available registers; and

a machine-readable code generator that generates a machine-readable representation of the computer procedure from the optimized representation.

14. (Unchanged) The computer system of claim 13, wherein the optimizer further comprises:

when the determining step is true, refraining from inlining the child procedure into the parent procedure.

15. (Unchanged) The computer system of claim 13, wherein the optimizer further comprises:

when the determining step is false, inlining the child procedure into the parent procedure in place of the statement that invokes the child procedure.

PATENT -- AMENDMENT WITH
APPEAL UNDER MPEP §1207

16. (Unchanged) The computer system of claim 15, wherein the optimizer further comprises:

setting the maximum register-pressure of the parent procedure to be a maximum of its existing value or the sum of the maximum register-pressure of the child procedure and the site register-pressure.

17. (Unchanged) A program product for optimizing a computer program that includes a child procedure and a parent procedure that comprises at least one statement that invokes the child procedure, comprising:

an optimizer that saves site register-pressure data from the execution of a first compilation, and

makes at least one inlining decision using the site register-pressure data during a second compilation; and

signal-bearing media bearing the optimizer.

18. (Unchanged) The program product of claim 17, wherein the optimizer further:
saves a maximum register-pressure occurring in each procedure in the computer program;
and

makes the at least one inlining decision using the maximum register-pressure data.

PATENT -- AMENDMENT WITH
APPEAL UNDER MPEP §1207

19. (Unchanged) The program product of claim 18, wherein the site register-pressure data comprises:

a register pressure at each call site in the computer program that is a potential inlining candidate.

20. (Unchanged) The program product of claim 17, wherein the optimizer further:
inlines the child procedure of the computer program into the parent procedure, in place of the statement that invokes the child procedure.

21. (Amended) A program product for optimizing a computer program that includes a child procedure and a parent procedure that comprises at least one statement that invokes the child procedure, comprising:

an optimizer that saves site register-pressure data from the execution of a first compilation, and makes at least one inlining decision using the site register-pressure data during a second compilation;

wherein the site register-pressure data comprises a register pressure at each call site in the computer program that is a potential inlining candidate; and

PATENT -- AMENDMENT WITH
APPEAL UNDER MPEP §1207

wherein, when deciding whether to inline the child procedure into the parent procedure, the optimizer determines whether a sum of the maximum register-pressure and the site register-pressure exceeds a number of available registers; and
signal-bearing media bearing the optimizer.

22. (Unchanged) The program product of claim 21, wherein the optimizer further:
when the determining step is true, refrains from inlining the child procedure into the parent procedure.

23. (Unchanged) The program product of claim 21, wherein the optimizer further:
when the determining step is false, inlines the child procedure into the parent procedure in place of the statement that invokes the child procedure.

24. (Unchanged) The program product of claim 23, wherein the optimizer further:
sets the maximum register-pressure of the parent procedure to be a maximum of its existing value or the sum of the maximum register-pressure of the child procedure and the site register-pressure.

Remarks

The Examiner objected to claims 5-8, 13-16, and 21-24 in the Office Action dated October 2, 2002, as being dependent on a rejected base claim. Applicants have rewritten

Docket No.: RO998-270
Serial No.: 09/286,862

PATENT -- AMENDMENT WITH
APPEAL UNDER MPEP §1207


Amended claims 5, 13, and 21 in independent form, including all of the limitations of the base claim and any intervening claims.

Applicant respectfully requests entry of these amendments to reduce issues for appeal. In view of these amendments, Applicant submits that claims 5-8, 13-16, and 21-24 are in condition for allowance and respectfully requests reconsideration and withdrawal of the objections.

It is to be understood that Applicant, by amending these claims, does not acquiesce to the Examiner's characterizations of the art of record or of Applicant's subject matter recited in the pending claims. Further, Applicant is not acquiescing to the Examiner's statements as to the applicability of the prior art of record to the pending claims by filing the instant amendment.

Date: March 27, 2003

Respectfully submitted,

By 
Grant A. Johnson
Registration No.: 42,696

From:

IBM Corporation
Intellectual Property Law
Dept. 917, Bldg. 006-1
3605 Highway 52 North
Rochester, MN 55901

Telephone: (507)253-4660
Fax: (507)253-2382

Docket No.: RO998-270
Serial No.: 09/286,862